REMARKS

Status of the Claims

Claims 1-4, 6, 7, 9-15, 17, 18, 33-36 and 40-45 are pending in the application.

Claims 1-4, 6, 7, 9-15, 17, 18, 33-36 and 40-45 are rejected.

By way of this amendment, claim 7, 18, 33, 41 have been amended and new claims 46-52 have been added.

Upon entry of this amendment, claims 1-4, 6, 7, 9-15, 17, 18, 33-36 and 40-52 will be pending.

Summary of the Amendment

Claims 7, 18 and 33 have been amended to more clearly define the claimed invention. Support is found on page 8 of the specification.

Claim 41 has been amended to correct an obvious error.

New claims 46-52 have been added to refer to specific embodiment of the invention.. Support is found on pages 20, 21 and 88 of the specification.

No new matter has been added.

Rejection under 35 U.S.C. §112, second paragraph

Claim 41 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claims the subject matter which Applicants regard as the invention.

Claim 41 has been amended to correct an obvious error which rendered the claim indefinite. As amended, claim 41 is clear and definite.

Applicants respectfully request that the rejection of claim 41 under 35 U.S.C. §112, second paragraph, be withdrawn.

Rejection under 35 U.S.C. §112, first paragraph

Claims 1-4, 6-, 9-15, 17-18, and 33-36 have been rejected under 35 U.S.C. §112, first paragraph, for lack of enablement. It is asserted that the specification,

> while being enabling for 1) a method of immunizing a mammal against Influenza comprising co-administering a plasmid DNA encoding Influenza HA and a plasmid encoding DR5 by intramuscular injection and 2) a pharmaceutical composition comprising a plasmid encoding Influenza HA and a plasmid encoding DR5, does not reasonably provide enablement for pharmaceutical compositions comprising a plasmid encoding any immunogen and a plasmid encoding DR5 or for methods of enhancing an immune response or methods of immunizing against any pathogen by administering plasmid(s) encoding an immunogen and DR5.

it is asserted that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. It is asserted that the specification, however, does not provide any specific guidance as to particular immunogens to be combined with DR5 or provide any specific guidance concerning the use of DR5 as an immunogen. It is asserted that the skilled artisan did not consider the generation of prophylactic or therapeutic immune responses against pathogens, particularly HIV or tumor associated antigens using nucleic acid immunization as predictable. It is asserted that the art at the time of filing clearly teaches that a significant number of variables affect the generation of specific immune responses which render the generation of a particular type of immune response in any mammal unpredictable for any given antigen.

Applicants respectfully urge that the claims are enabled by the specification. The reasoning provided to support the rejection states that those skilled in the art would not believe vaccine technology is predictable and that evidence of operability is necessary for one of skill in the art to conclude that the a vaccine is enabled. Applicants respectfully

disagree. While vaccine technology requires some acceptable degree of trial and error, those skilled in the art accept vaccines as working technology capable of providing protective immune responses. The data in the declaration of David Weiner shows that CD8+ immune responses are enhanced using claims invention. Those skilled in the art would recognize that the use of plasmid encoding DR5 in combination with vaccine technology to immunize against an immunogen would be enhanced. Nothing in the cited references teaches or suggests that the immuno-enhancing activity of DR5 is specific for the immunogens tested and that immuno-enhancing activity would not be observed using other immunogens as the target.

One skilled in the art would accept the predictability and enablement of vaccine technology. The evidence of record supports the conclusion of the claimed invention. Applicants respectfully request that the rejection of claims 1-4, 6-, 9-15, 17-18, and 33-36 under 35 U.S.C. §112, first paragraph, for lack of enablement be withdrawn.

Rejection under 35 U.S.C. §102(e)

Claims 1-3 and 12 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Number 6,417,328 issued to Alnemri (hereinafter the 328 Patent). It is asserted by the Office that:

> Alnemri et al. specifically teaches the pharmaceutical uses of plasmids encoding DR5 to treat disease and further teaches that the pharmaceutical compositions is a (sic) sterile aqueous solution that contains no materials in addition to the active ingredients of water or physiological saline (Alnemri et al., columns 22-23, particularly column 23, lines 12-20). Thus while Alnemri et al. does not specifically use the word "pyrogen-free", Alnemri et al. disclose compositions that are sterile and do not contain material other than the active ingredient, i.e. the plasmid encoding DR5, and water or saline. Such a sterile composition is inherently "pyrogen-free". Therefore,

Alnemri et al. does in fact teach compositions which meet the limitations of the claims.

The 368 Patent does not teach or suggest pharmaceutical uses of plasmids which include coding sequences for immunogens. Example IV of the 368 Patent refers to an apoptosis assay and experiments performed to study and compare apoptosis activity of DR5 and TRAIL-R3. These experiments utilize compositions that include coding sequences for immunogens include such coding sequences for immunogens as part of the experimental design. There is however, no reason disclosed or suggested why such immunogens/markers would be included in pharmaceutical compositions that include plasmids encoding DR5.

In order to anticipate a claim, every element of the claim must be disclosed expressly or inherently in a single reference. The 368 Patent does not disclose expressly or inherently a pyrogen-free composition comprising a plasmid comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements and a nucleotide sequence that encodes an DR5 operably linked to regulatory elements. Accordingly, the 368 Patent does not anticipate the claimed invention.

Applicants respectfully request that the rejection of claims 1, 2 and 12 under 35 U.S.C. §102(e) as being anticipated U.S. Patent Number 6,417,328 issued to Alnemri be withdrawn.

Rejection under 35 U.S.C. §103(a)

Claims 1-3, 6 and 12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Number 6,417,328 issued to Alnemri (hereinafter the 328 Patent) in view of U.S. Patent Number 5,693,622 issued to Wolff (hereinafter the 622 Patent). It is asserted that it would be obvious to those skilled in the art to combine the plasmids taught by the 328 Patent, which include coding sequences for DR5 and an

immunogen, with the techniques disclosed in the 622 Patent to produce the claimed invention.

Applicants respectfully urge that nothing in either reference teaches or suggests the immuno-enhancing effects of DR5. Thus one skilled in the art would not be motivated to produce a pharmaceutically pure form of plasmid or composition that comprised coding sequences for DR5 and an immunogen. There is absolutely no teaching or suggestion that would lead one skilled in the art to make a pyrogen free plasmid or composition that would include coding sequences for DR5 and an immunogen. There is no suggestion or motivation that would lead one skilled in the art who may wish to make a pyrogen free plasmid or composition that would include coding sequences for DR5 to also include coding sequences for an immunogen. Similarly, there is no suggestion or motivation that would lead one skilled in the art who may wish to make a pyrogen free plasmid or composition that would include coding sequences for an immunogen to also include coding sequences for DR5. Accordingly, while those skilled in the art may be taught by the 368 Patent to produce plasmids and compositions disclosed in the 368 Patent to study apoptosis activity of DR5, there is no motivation to purify it to the level of pyrogen free since there is no motivation to use such a plasmid or composition as a pyrogen free pharmaceutical.

Moreover, the unexpected results of achieving an enhanced immune response renders the invention nonobvious. Nothing in the combination of references teaches or suggests that the immune response induced against the immunogen is enhanced by the co-expression of DR5. Such surprising and unexpected results renders the invention non-obvious.

Applicants respectfully request that the rejection of claims 1, 2, 6 and 12 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Number 6,417,328 issued to Alnemri in view of U.S. Patent Number 5,693,622 issued to Wolff be withdrawn.

DOCKET NO: UPAP0011-100 (K-1765)
Serial No.: 09/622,452

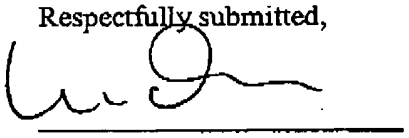
PATENT
Filed: October 31, 2000

Conclusion

As indicated on the transmittal accompanying this response, the Commissioner is hereby authorized to charge any debit or credit any overpayment to Deposit Account No. 50-1275.

The claims are in condition for allowance. An early Notice of Allowance is therefore earnestly solicited. Applicants invite the Examiner to contact the undersigned at (215) 665-5592 to clarify any unresolved issues raised by this response.

Respectfully submitted,



Mark DeLuca
Reg. No. 33,229

Date: October 19, 2006

COZEN O'CONNOR, P.C.
1900 Market Street
Philadelphia, PA 19103-3508
Telephone: 215.665.5592
Facsimile: 215.701.2100